

Abstract Submitted
for the apr97 Meeting of
The American Physical Society

Sorting Category: I.6

The Search for Rigid Triaxiality in Pt with GEANIE

L.A. BERNSTEIN, D.E. ARCHER, J.A. BECKER, W. YOUNES, LLNL, D.M. DRAKE, G.D. JOHNS, R.O. NELSON, LANL¹ — Rigid triaxial ($\gamma \neq n \times 60^\circ$) nuclear motion has never been definitively observed. Total Routhian Surface calculations predict a transition from γ -soft to γ -rigid rotational motion at $\hbar\omega \approx 0.2$ MeV in $^{188-196}\text{Pt}$ ($Z=78$) nuclei. Theoretical signatures of this transition include $B(E2)$ values and branching ratios between off-yrast and yrast states at moderate ($J \leq 10 \hbar$) spin. The transition to rigid triaxiality has remained unobservable in Pt nuclei since the (n,γ) reactions used to study these nuclei populates states at low-spin ($J < 4\hbar$). The combination of the GEANIE array and the LANSCE/WNR Spallation Neutron Facility enables observation of the signatures of the transition via $\text{Pt}(n,xn\gamma)$ reactions and the techniques of coincident spectroscopy with a large multi-Ge array. The results of a test run using a partial implementation of GEANIE and a ^{196}Pt target will be presented and compared to the predictions of several theoretical models.

¹This work is supported by the U.S. Department of Energy under contract numbers W-7405-ENG-48 (LLNL) and W-4705-ENG-36 (LANL).

- ☒ Prefer Oral Session
☐ Prefer Poster Session

Lee Bernstein
bernstein2@llnl.gov
Lawrence Livermore National Lab

Date submitted: January 17, 1997

Electronic form version 1.2